

EXAMINATION REPORT FOR PUZZLE TYPE MECHANIZED VEHICLE PARKING SYSTEMS (MVPS-PT)

1. Basic Information and Description of Installation

Location (Address) _____
 Lift No. _____ Lift Location ID _____
 Brand _____ Model _____ Maximum Vertical Travel _____ m
 Number of Levels _____
 Number of Columns _____
 Number of Parking Spaces _____
 Max. Allowable Car Dimensions (LxWxH) _____ m
 Rated Load for Each Carrier _____ kg
 Vertical Movement Rated Speed _____ m/s Horizontal Movement Rated Speed _____ m/s
 Power Supply at Time of Test _____ Volt _____ Phase _____ Hz
 Drive Type: _____ Control Type: _____
 Model No. and Name of Manufacturer of the Controller _____

2. Static Examination – Mechanical

2.1 Suspension

(a) Suspension Ropes N.A. ☐
 Certificate No. & Date of Issue _____
 Number per carrier _____ Nominal Diameter _____

Have the suspension ropes attained the criteria for replacement in accordance with Clause 5.4.8 of the Works Code? Yes ☐ No ☐

(b) Chains N.A. ☐
 Brand and ISO / model number of drive chain of lifting motor _____
 Brand and ISO / model number of drive chain of sliding motor _____
 Brand and ISO / model number of lifting chain _____

Are all chains checked to be without visible cracks, well-lubricated and in good working condition? Yes ☐ No ☐

Are the elongations of all chains within the maximum allowable elongation recommended by the manufacturer? Yes ☐ No ☐

2.2 Brake

(a) Type: *Drum/ Disc *Single/ Double
 (b) Does the brake sustain a static carrier with 125% of the rated load? Yes ☐ No ☐
 (This test is only required to be conducted in examinations with load.)

3. Static Examination – Electrical

3.1 Insulation Resistance to Earth

(a) Lifting Motors (attach supplementary sheet if necessary)

Carrier No.	Insulation Resistance to Earth (MΩ)

(b) Sliding Motors (attach supplementary sheet if necessary)

Carrier No.	Insulation Resistance to Earth (MΩ)

(c) Power System _____ MΩ

(d) Control Circuit _____ MΩ

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3.2 Earthing

- (a) Is the maximum continuity resistance to earth less than 0.5Ω ? Yes ☐ No ☐
- (b) Is the carrier connected to controller earthing terminal by a separate conductor with proper sizing? Yes ☐ No ☐

3.3 Protection of Conductors

Is the fixed wiring in conduit or trunking (or fittings that ensure equivalent protection) throughout? Yes ☐ No ☐

3.4 Phase Reversal and Phase Failure Devices

Do the phase reversal and phase failure devices operate/ function correctly? Yes ☐ No ☐

4. Dynamic Tests

- (a) Have all carriers been operated satisfactorily when running at *no load / full load? Yes ☐ No ☐
- (b) Have all operation brakes been tested at *no load / full load when travelling at rated speed? Yes ☐ No ☐
- (c) Have all gates been tested to operate satisfactorily? Yes ☐ No ☐
- (d) Have all gate switches been proved that when the gates are not at the fully closed position, there is no movement of the carrier? Yes ☐ No ☐
- (e) Do the safety hooks disengage when the carriers are lowered from the storage position? Yes ☐ No ☐
- (f) Do the brakes engage and stop a moving carrier when power supply is cut from the system? Yes ☐ No ☐

5. Measurements of the Electrical System

5.1 Particulars of Lifting Motors

Manufacturer_____ Serial Number_____

Voltage at Time of Test_____ Rated Current_____

Rated Power_____

5.2 Particulars of Sliding Motors

Manufacturer_____ Serial Number_____

Voltage at Time of Test_____ Rated Current_____

Rated Power_____

5.3 Lifting Motor Current Tests (attach supplementary sheet if necessary)

- (a) Tests with 100% and 110% rated load are only required to be conducted in examinations with load.
- (b) These tests should be conducted with the carrier travelling upwards at rated speed.

Carrier No.	No load: Motor input (A)	100% rated load: Motor input (A)	110% rated load: Motor input (A)	Trip Setting of overcurrent relay (A) (If applicable)

6. Overload Detection

- (a) Overload detection is achieved by_____
- (b) Does the overload device operate satisfactorily? Yes ☐ No ☐

7. Safety Hook Test

This test is only required to be conducted in examinations with load.

Can the safety hooks catch a carrier carrying 100% of the rated load and travelling downwards at rated speed? Yes ☐ No ☐

8. Emergency Stop Test with Load

This test is only required to be conducted in examinations with load.

Does a carrier travelling in down direction at rated speed and carrying 125% of the rated load stop safely under emergency stopping conditions? Yes ☐ No ☐

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9. Operational / Safety Devices

Are the following devices, where fitted, operating correctly?

- | | | | |
|---|-------------------------------|------------------------------|-----------------------------|
| (a) Emergency Stop Switches | N.A. ☐ | Yes ☐ | No ☐ |
| (b) Anti-intrusion Sensors | N.A. ☐ | Yes ☐ | No ☐ |
| (c) Dimension Checking Sensors | N.A. ☐ | Yes ☐ | No ☐ |
| (d) Upper Limit Switches | N.A. ☐ | Yes ☐ | No ☐ |
| (e) Lower Limit Switches | N.A. ☐ | Yes ☐ | No ☐ |
| (f) Ultimate Limit Switches | N.A. ☐ | Yes ☐ | No ☐ |
| (g) Horizontal Limit Switches | N.A. ☐ | Yes ☐ | No ☐ |
| (h) Chain/Rope Slack Detection Switches | N.A. ☐ | Yes ☐ | No ☐ |
| (i) Audio/Visual Alarms | N.A. ☐ | Yes ☐ | No ☐ |
| (j) CCTV | N.A. ☐ | Yes ☐ | No ☐ |
| (k) Emergency Lighting | N.A. ☐ | Yes ☐ | No ☐ |
| (l) Intercom | N.A. ☐ | Yes ☐ | No ☐ |

- | | | |
|--|------------------------------|-----------------------------|
| (d) Does the manual-release function of the brake operate correctly? | Yes ☐ | No ☐ |
| (e) After pressing the emergency stop switch, does the MVPS remain inoperable until the system has been reset and the emergency stop switch has been released? | Yes ☐ | No ☐ |
| (f) Are CCTVs connected to the CCTV monitors installed at the office of the MVPS operator or fault call centre? | Yes ☐ | No ☐ |
| (g) Are audio/visual alarms activated during movement of the carriers/gates? | Yes ☐ | No ☐ |
| (h) Is light level of 50 lux provided at locations where users have access? | Yes ☐ | No ☐ |
| (i) Is light level of 200 lux provided at the control panel of the MVPS? | Yes ☐ | No ☐ |

10. Electric Vehicle (EV) Chargers

- | | | |
|--|------------------------------|-----------------------------|
| (a) Are EV charger(s) installed in the MVPS? | Yes ☐ | No ☐ |
|--|------------------------------|-----------------------------|

The items below are only required to be checked if EV chargers are installed in the MVPS.

- | | | | |
|---|-------------------------------|------------------------------|-----------------------------|
| (b) Are the EV charger(s) and their associated equipment properly installed such that they do not affect the safe operation of the MVPS? | N.A. ☐ | Yes ☐ | No ☐ |
| (c) Are appropriate safety devices installed to check that the devices connecting the EV charger to the vehicle do not affect the safe operation of the MVPS? | N.A. ☐ | Yes ☐ | No ☐ |
| (d) Are the safety devices mentioned in part (c) properly installed such that they do not affect the safe operation of the MVPS? | N.A. ☐ | Yes ☐ | No ☐ |

11. General

- | | | |
|--|------------------------------|-----------------------------|
| (a) Are the maximum vehicle weight and dimensions displayed in a conspicuous position in the proximity of the MVPS? | Yes ☐ | No ☐ |
| (b) Are the operation instructions and warnings against misuse displayed in a conspicuous position in the proximity of the MVPS? | Yes ☐ | No ☐ |
| (c) Are the contact details of the MVPS operator displayed in a conspicuous position in the proximity of the MVPS? | Yes ☐ | No ☐ |

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12. Declaration

I certify that on _____ the MVPS and all its associated equipment or machinery were thoroughly examined, and found to be free from obvious defects and in safe working order. I confirm also that the design and construction of the MVPS and all its associated equipment or machinery complied with the principles and requirements of **BS EN 14010:2003+A1:2009 Safety of machinery - Equipment for power driven parking of motor vehicles. Safety and EMC requirements for design, manufacturing, erection and commissioning stages** and the type approval document, where applicable, with the exception of the following items (if any, please specify).

Exceptions:

The information in this examination report is an accurate record of the examination carried out on the aforementioned date.

Name & Registration No. of
Registered Lift Engineer

Signature

Date